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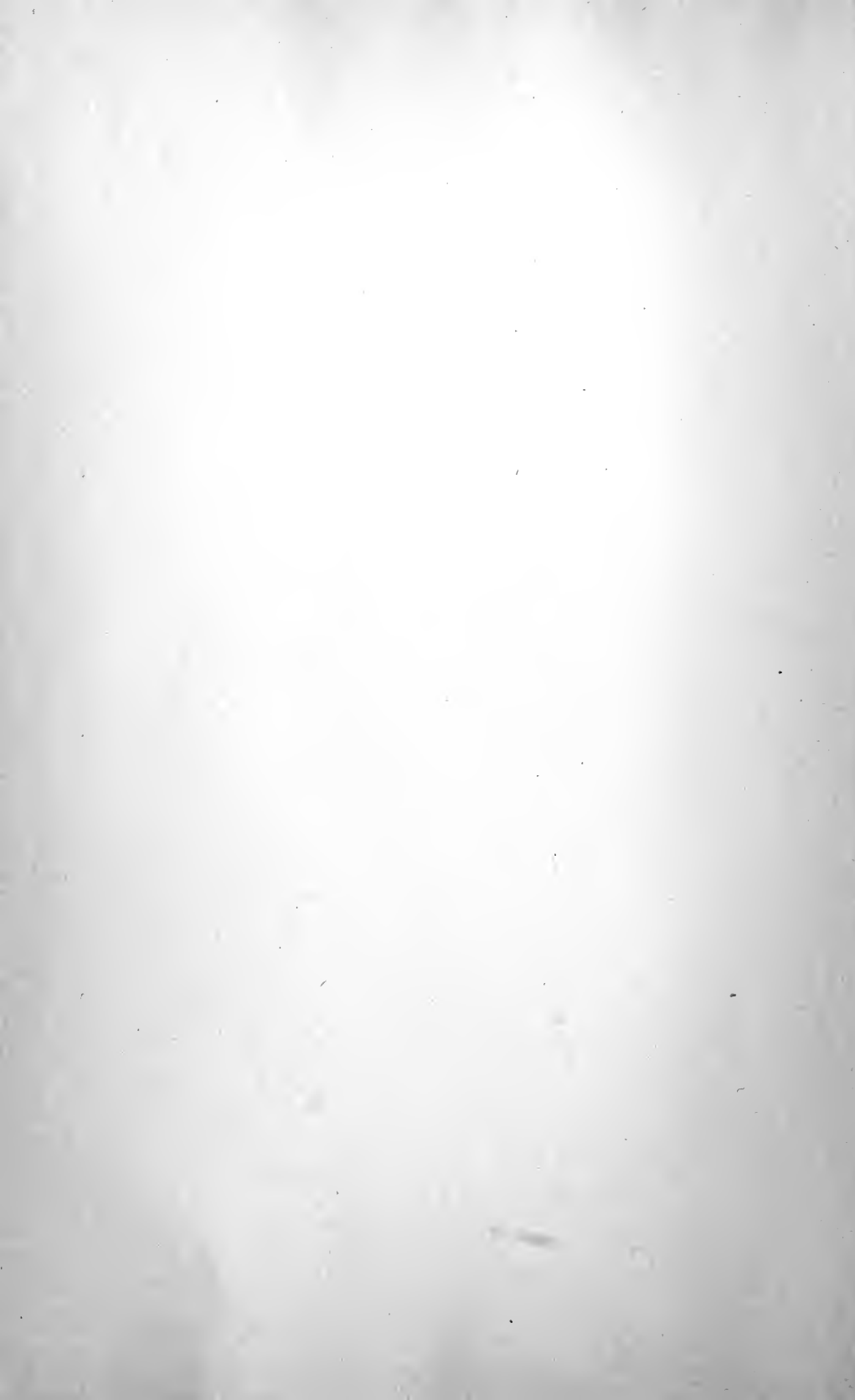
NEWTON M. SHAFFER

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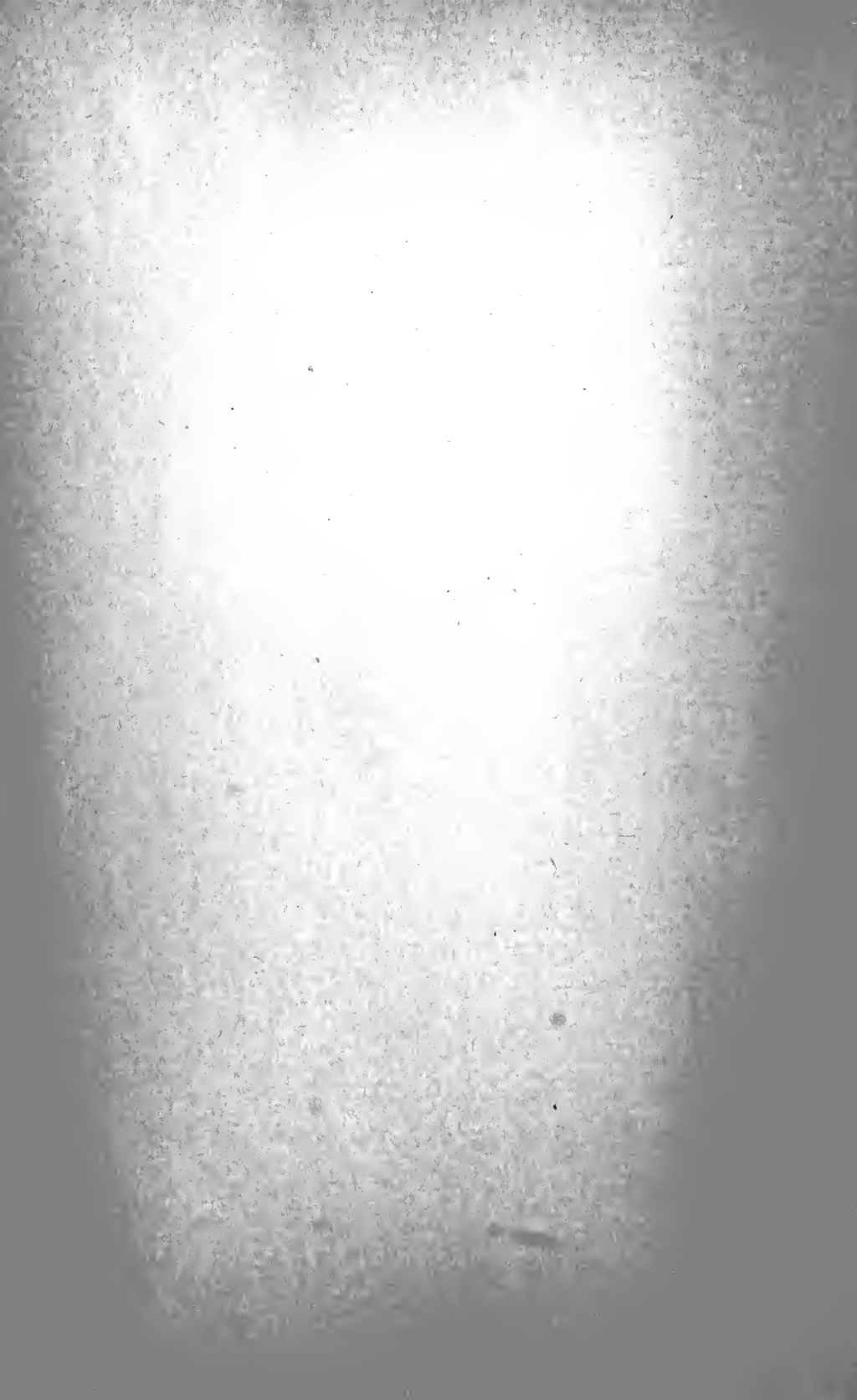
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BRIEF ESSAYS ON ORTHOPÆDIC SURGERY

INCLUDING A CONSIDERATION OF ITS RELATION
TO GENERAL SURGERY, ITS FUTURE DEMANDS,
AND ITS OPERATIVE AS WELL AS ITS MECHAN-
ICAL ASPECTS, WITH REMARKS ON SPECIALISM

BY

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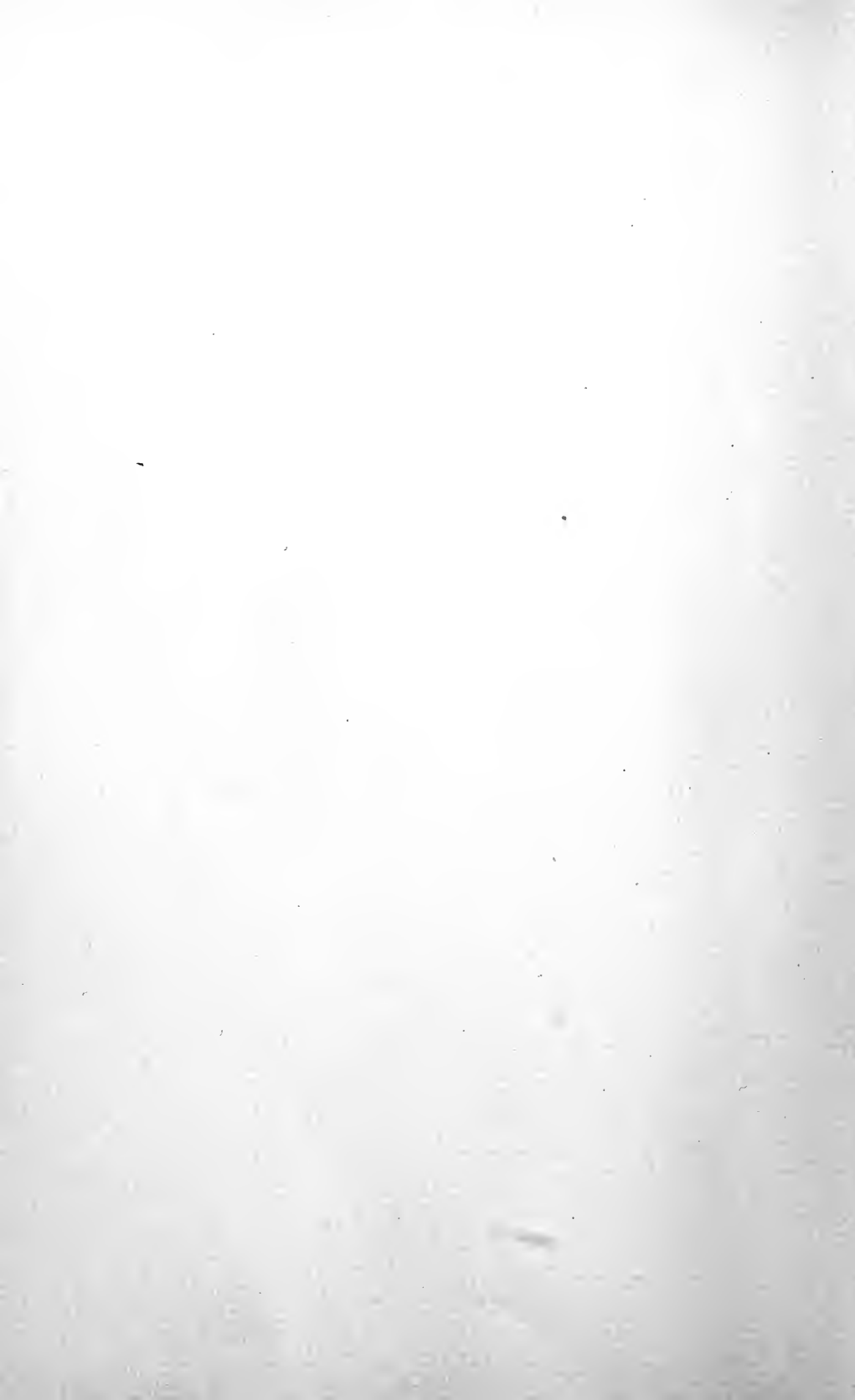
P R E F A C E .

AT the request of a few friends, who have been kind enough to take considerable interest in my work, these essays, which have appeared at various periods during the past fourteen years, are now presented in their present form, and they are submitted to the medical profession and the public with the hope that orthopædic surgery may be benefited by their publication.

N. M. S.

28 EAST THIRTY-EIGHTH STREET, NEW YORK,

January 30, 1898.



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BRIEF ESSAYS ON ORTHOPÆDIC SURGERY.

THE PRESENT STATUS OF ORTHOPÆDIC SURGERY.*

TRACING the history of orthopædic surgery from the time of Andry to the present day, we notice that its more important progress has taken place within a very recent period. It will be further noted that America has made by far the most important contributions to, at least, the mechanical element in orthopædic surgery, and that the impetus given to the study of diseased joints and spines by American surgeons has influenced the treatment of these diseases and deformities throughout the entire world.

* Reprinted from the New York Medical Journal, January 26, 1884.

Whether it was Brodie or Harris that first used or pointed out the value of traction in joint disease, or whether the possibility of successfully treating Pott's disease by the modern form of apparatus was first suggested by English or American surgeons, matters but little from a practical standpoint.

1857 It will probably not be disputed that Dr. H. G. Davis, formerly of New York, conferred a great benefit upon humanity when he gave his perfected apparatus to the world, embodying the principles of traction as applied to joint disease; and, since his day, while various surgeons have from time to time modified and changed Davis's instruments, the Davis principle underlies all of them. His plain and simple directions as to the mechanical principles involved in treatment are followed, more or less in detail, by almost all who treat diseased spines and joints to-day.

Twenty-one years ago, when the writer began the study of orthopædic surgery, there was little to be proud of in its status in the city of New York. At that time a certain prominent surgeon, in speaking to the writer, not only discouraged the adoption of orthopædic surgery as a specialty but predicted that any one adopt-

ing it would fail and be called a blacksmith for his pains.

Forty years ago orthopædic surgery did not include joint and spinal disease, but only such deformities as clubfoot, wryneck, knock-knee, etc. Strabismus was classed as an orthopædic condition by Bigelow when he wrote his prize dissertation in 1845—about ten years before Davis gave to the profession his treatment of joint and spinal diseases. After Davis's time, those making any pretense to the treatment of deformities classed joint and spinal diseases as orthopædic; or, at least, their reputations have been due to successes not so much in the field of operative work as to a mechanical aptitude in the treatment of the diseases and deformities of the joints and spine. It is, perhaps, in this latter field that Bauer, Sayre, and Taylor appear to the greatest advantage, and the teachings of these gentlemen, all more or less inspired by Davis, form the foundation of much of the orthopædic surgery practiced in the United States to-day; for, while all must concede the debt owed by orthopædic surgery to Dr. W. J. Little, of London, that eminent writer, the father of orthopædic surgery in England, does not include articular disease in his treat-

ises, and, without a full discussion of the mechanical and secondarily of the operative treatment of joint disease, no treatise on orthopædic surgery can now be called complete.

It is not intended, however, to make this short note an historical review of orthopædic surgery; it is neither profitable nor necessary to raise points which may involve questions of priority. It is rather the aim of the writer to give a short sketch of what orthopædic surgery is to-day, and what it demands from those who enter upon its study and practice, for orthopædic surgery may now be ranked among the growing and necessary specialties—as a more useful one, indeed, than some which make greater pretensions.

In my lectures at the University Medical College and at the New York Orthopædic Dispensary and Hospital I have ventured to define orthopædic surgery as follows: “That department of general surgery which includes the mechanical and operative treatment of chronic and progressive deformities, for the proper treatment of which specially devised apparatus is necessary.”

Whether, therefore, the condition be one of clubfoot, joint disease, lateral curvature, or

spinal caries, the indications are to be studied, and these indications are to be met from a pathological, anatomical, surgical, and mechanical standpoint. To do this the orthopædic surgeon must be fully informed upon general medicine and surgery, and must be prepared to prescribe his apparatus precisely as a general practitioner prescribes a remedy for disease.

In order to satisfactorily carry out the system of prescribing apparatus for deformities, the instrument-maker should be placed in the same category as the pharmacist, and should supply apparatus for deformities only upon a prescription—i. e., a carefully executed diagram of the apparatus needed. But how is an educated orthopædic surgeon to execute this plan? While orthopædic surgery has advanced to the dignity of a well-recognized place in general surgery, the facilities for filling a mechanical prescription are in some respects no better than they were fifty years ago. As a rule, the instrument-maker who now fills the prescription of the orthopædic or general surgeon is not unwilling to treat deformity himself, and it not infrequently occurs that he makes suggestions to the patients that are sent to him. There is, I regret to say, some excuse for this, for it has

sometimes happened that the instrument-maker has a better idea of what is needed than the surgeon who sent the patient to him, for the reason that orthopædic surgery is not, as a rule, taught in our medical schools, and the generally lax way in which chronic deformities are referred to leaves the newly fledged graduate utterly unprepared to treat them, especially in a mechanical sense. Nor is it at all unusual for the instrument-maker to be called in a kind of a consultation by the surgeon, to devise some sort of apparatus to accomplish an ill-defined end in a given case of deformity or disease. Still further, there are scattered throughout the country various agents of the prominent instrument-making firms—druggists, for example, who prescribe for the most serious cases in orthopædic surgery and order an apparatus from a distance about which they know little or nothing, except that gained from the catalogues. The amount of deformity—not to mention incidental suffering and expense entailed by this system of ignorance and charlatantry—can not be estimated. The writer knows that in a certain city not far from New York an instrument-maker is called in by the surgeons of a certain hospital, and the patient is practically

turned over to the mechanic after a diagnosis is made, as if there were something degrading and unprofessional in attending in detail to the mechanical department of orthopædic work.

But it requires education and a long systematic training to make a competent orthopædic surgeon; and more: it requires a peculiar adaptability to successfully prosecute the mechanical detail in any case of orthopædic surgery, even under the best auspices. The orthopædic surgeon should be able, as a matter of education, to make, if necessary, the apparatus which he needs. He should at least know *how* to make it; he should know more than his workman about the various grades of steel, the points where strength is necessary, where lightness may be tolerated without sacrifice to strength, etc.; and, indeed, unless one is willing to master such details and to become a mechanician himself, it is better that he should let orthopædic surgery alone. No man can be a scientific orthopædist, competent to give to his patients the skill which they have a right to demand, who does not become responsible for everything not directly pertaining to the manufacture of the instruments to be used. The day can not be very far distant when the truth of these statements

will be recognized; and, while a more comprehensive course of instruction in orthopædic surgery will be demanded, the various public institutions will provide the means by which deformities can be properly cared for.

There seems to the writer to be no reason why the mechanical element of treatment should be ignored because it is so purely manual; nor can he imagine that a disease or a deformity essentially painless in its nature, though insidiously progressive in character, should be relegated to an uneducated class simply because death is not imminent. The pathological conditions existing in many cases involving deformity are very serious, and should not be placed in the hands of ignorant or designing men. They can not be successfully handled by even the general practitioner unless he has the time, the ability, the experience, and the patience to follow a case in detail for perhaps two or three years. Success such as ought to characterize orthopædic practice comes only through hard work, patient attention to detail, and a thorough mastery of mechanical surgery.

These matters are, I think, more thoroughly appreciated in New York than elsewhere in this country. When the writer was appointed ortho-

pædic surgeon to St. Luke's Hospital, eleven years ago, it was with the distinct understanding that these principles were to underlie the orthopædic work, and the success of the movement there is greatly due to this provision.

In the New York Orthopædic Dispensary and Hospital there is, in direct connection with the institution, a fully equipped mechanical room in which four or five men are constantly employed making apparatus directly under the instructions of the surgeons. No apparatus is made without a drawing, and careful measurements accompanied by actual outlines, when necessary, are given with every order. No repairs are made except by personal instruction of the surgeons, accompanied by drawings if necessary. The consequence is that patients are there treated with great satisfaction, and the instrument-makers have there become skilled workmen, some of whom have gone to the aid of orthopædic surgeons in other cities. It is a great pleasure to note in this connection that in another city steps have been taken to introduce the methods of the New York Orthopædic Dispensary into one of the most prominent hospitals and medical schools of the country. The Orthopædic Dispensary of the University Hos-

pital in Philadelphia has, in connection with its service, a fully equipped shop, supplied with steam power, where the apparatus used is made after the diagrams, and under the direction of the attending surgeon. This change can not but result in good, for reasons that must be apparent to all. It relegates the instrument-maker to his proper sphere, bringing him wholly under control of the surgeon, upon whom it fixes the entire responsibility for the conduct of his cases. No delays are incurred either in making new apparatus or in repairing old ones, and the patients are supplied with apparatus at first cost—an important item when one considers the enormous prices charged by instrument-makers for their apparatus. The fact is, that all hospitals should be similarly equipped with a complete orthopædic department. The expense is not great. Dr. A. Sidney Roberts, formerly an assistant surgeon to the New York Orthopædic Dispensary and Hospital, and through whose personal exertions the orthopædic shop of the University Hospital was organized, informs me that the entire cost of the same did not exceed \$2,000, which includes a building erected for the purpose, and that the shop is now nearly self-sustaining—

the actual cost of production only being charged to those patients who were able to pay it.* This is certainly a good exhibit, and confirms our experience at the New York Orthopædic Dispensary. The great advantage it will confer upon the institution, the surgeons, and the patients, leads to the hope that other colleges and hospitals throughout the country may be led to adopt the same plan, and thus, while extending to a large class of sufferers all the benefits of a thorough, systematic, and scientific treatment, aid in placing orthopædic surgery in its proper status before the profession at large.

* Since the resignation and death of Dr. Roberts this work has been most successfully carried on by Dr. De Forest Willard and Dr. J. K. Young, of the University College and Hospital staff.

WHAT IS ORTHOPÆDIC SURGERY?*

THE recent action of the Orthopædic Section of the New York Academy of Medicine in appointing a committee to secure for orthopædic surgery an official recognition by the Tenth International Medical Congress has been successful. Orthopædic surgery is placed, by this act, upon the same plane with the other special branches of medicine and surgery, and an important duty is imposed upon those who will assemble in Berlin to participate in the proceedings of this newly created section. It would seem, from the many replies which have been received by the committee in response to the circular letter which was sent to those interested in orthopædic surgery, that there exists a very general desire to aid this important de-

* Read before the Orthopædic Section of the Tenth International Medical Congress, Berlin, August 5, 1890.

Reprinted from the Medical Record, September 27, 1890.

partment of surgery. Over one hundred replies have been received from English, Continental, and American surgeons. With a few exceptions the replies have been favorable to the views and wishes of the committee.

Of those who have expressed doubts as to the advisability of creating a special section of orthopædic surgery at the congress, some have plainly said that this special section was not necessary; others have stated that in certain localities the treatment of deformities was influenced by a class of men who were not regularly educated surgeons; while others, again, see difficulty in drawing the line between general and orthopædic surgery.

These facts raise some important questions which, it seems to the writer, should be discussed by the members of the orthopædic section at its first meeting in Berlin; and the remarks that I have the honor to present have been suggested by the evident differences of opinion that exist regarding the status of orthopædic surgery. And the writer desires to state that the opinions here expressed are his personal views only, and that the committee appointed by the Orthopædic Section of the New York Academy of Medicine (of which the writer

has the honor to be a member) is in no way responsible for them.

It seems unnecessary on this occasion to consider orthopædic surgery from a, strictly speaking, historical standpoint. A few historical facts may be mentioned, however, which bear upon the rise and progress of the treatment of deformities.

From the time of Andry the word "orthopædic" has been identified with the treatment of deformities, and an "orthopædist" has been one who treated deformity. But it was not until Stromeyer, in 1830, demonstrated the feasibility and the value of subcutaneous tenotomy that "orthopædics" obtained its first firm foothold in the profession. Both before and after Stromeyer's time, however, mechanico-therapy was the fundamental part of the treatment of deformities. The introduction of subcutaneous tenotomy and of subcutaneous myotomy supplemented the treatment of deformity by mechanical means. Subcutaneous surgery did not dispense with the mechanical element of treatment; it rather emphasized its value and necessity. And it is fitting that we should note that the first great advance in orthopædic surgery occurred in Germany, under the influence of

Stromeyer's teachings, and that his methods soon became recognized and practiced in all parts of the world.

The status of orthopædic surgery in 1844, about fourteen years after Stromeyer's methods were introduced, is very clearly shown by the essay * of Dr. Henry J. Bigelow upon orthopædic surgery. In this work Dr. Bigelow quotes largely from Stromeyer, Guerin, Bonnet, Velpeau, Phillips, Duval, Dieffenbach, and Little. The subjects treated by Bigelow, in addition to clubfoot, lateral curvature of the spine, torticollis, etc., include both stammering and strabismus. The operation for the last-named condition has long since been recognized as belonging to the special department of ophthalmology, while the former was long ago abandoned. It seems clear, however, from Bigelow's essay, that, at the date he wrote, orthopædic surgery, so far as operative treatment is concerned, was synonymous with subcutaneous tenotomy and subcutaneous myotomy, and that any condition requiring either of these operations was to be classed under orthopædic surgery.

A few years later, or about 1852, an Ameri-

* Manual of Orthopædic Surgery. The Boylston Prize Essay for 1844; published in 1845 in Boston.

can surgeon, Dr. Henry G. Davis, published his essay, in which he advised the use of elastic traction by means of a portative apparatus in the treatment of hip-joint disease. He also demonstrated the value of traction apparatus for overcoming the deformities occasioned by chronic articular lesions. The treatment of Pott's disease by means of the antero-posterior spinal apparatus was also demonstrated by Dr. Davis and Dr. C. F. Taylor, and the subject of the mechanical treatment of chronic joint and spinal disease received a marked degree of attention from the surgeons of the United States especially.

In this field Dr. Lewis A. Sayre and Dr. Charles Fayette Taylor became very conspicuous. They amplified Dr. Davis's apparatus, and devised many forms of apparatus for the treatment of chronic and progressive deformities, and under their leadership the treatment of chronic joint and spinal disease became a distinctive feature of the American School of Orthopædic Surgery, and another era in orthopædics, second only to that of Stromeyer, was inaugurated.

Up to about 1870, or thereabouts, it would therefore appear that two important factors had

aided in placing orthopædic surgery upon a satisfactory basis: First, the introduction of subcutaneous surgery by a German surgeon; and secondly, the introduction of the portative traction method of treatment of chronic joint disease by an American surgeon. Of the former it may be said that subcutaneous surgery is rarely used in the treatment of chronic deformity without after-mechanical treatment, which after-mechanical treatment is oftentimes more important and essential than the cutting operation, and special skill and training are often required to apply it successfully. Of the latter we may safely say that it is not until the mechanical treatment has proved inefficient that cutting measures are, as a rule, thought of, and that when cutting measures are deemed necessary the after-treatment calls for little else than simple surgical dressings, which do not demand a special orthopædic training to apply. The introduction of the traction splint in the treatment of chronic joint disease, as well as the introduction of the antero-posterior splint for Pott's disease, enlarged the field of practical orthopædics very much. "Preventive" surgery, the highest aim of surgery, became an important factor in the treatment of this class of chronic deformi-

ties. By the judicious use of traction apparatus, portative or otherwise, deformity can be prevented, and in many cases the disease producing the deformity can be arrested. And even after the deformity of chronic articular disease has become pronounced, it can, in many cases, be overcome or greatly modified without any cutting operation. Indeed, the tendency of orthopædic surgery has always been toward conservatism. Its principal victories have been won in this field, and it would seem to be a great error to lose sight in any way of the principal factor which has contributed so largely to its present position.

Up to this point, or about 1870, it will be seen that orthopædic surgery had not invaded the field of general surgery. Availing itself of all that contributed to the relief of deformity from its conservative standpoint, it found many difficult problems which it did its best to master. It took hold of and cared for a much neglected class of humanity—a class that had long been neglected by the profession at large. Even at this day the general surgeon, as a rule, cares but little for orthopædic work. He is fully occupied in a large field which is every day becoming more exacting—while the ortho-

pædic surgeon is devoting himself to a department which has none of the brilliancy of operative surgery; which requires much patient attention to mechanical detail; which demands special facilities for altering and modifying apparatus, and a special training and education which very few surgeons have received.

It is not many years ago, however, that general surgery began to invade the domain of orthopædic surgery. This is especially true since the Lister method has become so universally accepted. The knife, the saw, the chisel, and the osteoclast have become potent factors in the reduction of obstinate osseous deformities. Knock-knee, bowlegs, old and obstinate cases of clubfoot, and other conditions are relieved by the direct surgical method, without special after-treatment except simple surgical dressings. This marks another era in the treatment of deformities, and is a legitimate advance in *general surgery*. And it was about this time also that joint resections began to attract the marked attention of surgeons of the United States.

To some orthopædic surgeons these innovations of general surgery have proved a stumbling-block. They diverted the attention from the hard and rugged paths of orthopædic work

per se to the brilliant work of the general surgeon. I know myself that the allurements of the operating table are very great, for about this time I had my own attack of "surgical fever," which, I am happy to say, proved a self-limiting fever of comparatively short duration. But it raised the questions then, as it raises them now—Where shall the line be drawn? What is orthopædic surgery? Shall orthopædic surgeons be general surgeons as well, and shall general surgeons be orthopædist? If these questions are answered in the affirmative, there is no room for a special orthopædic section in the Berlin Congress.

Reference has already been made to Bigelow's work, published in 1845. If we compare it with Sayre's work on Orthopædic Surgery and Diseases of the Joints, published in 1876, or with Bradford and Lovett's work on Orthopædic Surgery, published in 1890, we will see that the tendency of modern orthopædic surgery is to invade the field of general surgery. Bigelow's work teaches subcutaneous tenotomy and myotomy plus special mechanical treatment, and nothing more. It does not mention diseases of the joints or Pott's disease of the spine. It deals with the subject of the mechan-

ical treatment of chronic deformity in a meager way, a subject which is full of brilliant promise in the future. It suggests a field which has never been fully developed, and which rests with orthopædic surgery to develop—viz., complete and scientific methods of mechanical treatment, which, when fully developed, will represent as much of real value to the human race as general surgery itself. It already represents a great deal, especially in the mechanical treatment of chronic joint and spinal disease, for since orthopædic surgeons have done so much to render plain the early diagnosis of joint and spinal diseases, mechanico-therapy can prevent the occurrence of deformity, and can frequently arrest the disease in its first or non-deforming stage. And still more: when the articular disease has advanced and pain is present, or when deformity is progressive and abscess is about to form, or has already formed, mechanico-therapy, properly understood and applied, can hold out to the sufferer more than the operative or general surgeon. In the field of chronic articular disease alone there is enough to do, and enough for the orthopædic surgeon to learn, without invading at all the field of general or operative work.

Let us see the position Sayre takes in 1876. His work, already mentioned, covers, generally speaking, the conditions treated by Bigelow in 1844, and adds to the list "diseases of the joints." This is to be expected, for the author's greatest reputation is based upon his experience in the treatment of joint and spinal diseases. He is especially strong in his description of joint and spinal conditions, ample attention being given to diagnosis and prognosis. He devotes much space to excision of the joints. The great strength of his work, however, lies in its orthopædic part, or in the description of deformities and their mechanical treatment. The work is one of the pioneers in an important field, Dr. Louis Bauer having covered somewhat the same ground a few years before. The part of the work that is of the least value *per se* is the part which treats of joint excisions, for the reason that the subject is well considered and amply discussed in contemporary surgical literature. While the part which dwells upon orthopædic surgery is novel, interesting, and, in its way, classical.

Bradford and Lovett, in 1890, group all deformities under one head of "orthopædic surgery" and reject the qualifying title of "dis-

eases of the joints" adopted by Sayre. In addition to the conditions treated by Bigelow and Sayre, we find these authors include several new titles. Among them are the "cerebral paralysis of children," "pseudo-hypertrophic paralysis," "Dupuytren's contraction," "webbed fingers," and "functional affections of the joints." They extend the surgical aspect of the treatment of deformities and give a large portion of their work to resection of the joints, amputation at the hip joint, laminectomy, osteotomy, osteoclasia, etc. It seems unnecessary to call attention to the excellent and thorough way in which the, strictly speaking, orthopædic part of the work is executed. It is rather the object of the writer to call attention to the unnecessary invasion of the field of general surgery, in a special treatise on orthopædic surgery, when the purely surgical aspect of the conditions named is amply covered in the current surgical literature of the day.

None of the writers I have referred to define orthopædic surgery in their works, and the definitions given in the various dictionaries are familiar to us all. I have found none that seems sufficiently definite, or that covers the ground from the standpoint of modern orthopædic sur-

gery. Under these circumstances, I found myself, several years ago, called upon to define orthopædic surgery, by the class at the University Medical College, and I then ventured upon the following definition*: "Orthopædic surgery is that department of general surgery which includes the mechanical and operative treatment of chronic and progressive deformities, for the proper treatment of which specially devised apparatus is necessary." I would modify this definition to-day so that it would read as follows: "Orthopædic surgery is that department of surgery which includes the prevention, the mechanical treatment, and the operative treatment of chronic or progressive deformities, for the proper treatment of which special forms of apparatus or special mechanical dressings are necessary."

No one doubts, myself least of all, that the orthopædic surgeon should be, from the standpoint of education, a surgeon in every sense of the word; that he should be a well-educated medical man, with ample clinical experience, before he enters the field of specialism. In short, it seems to the writer that the orthopæ-

* The Present Status of Orthopædic Surgery, New York Medical Journal, January 26, 1884.

dic surgeon should take a step *in advance* of the general surgeon, and that his education should include all that is necessary to make a general surgeon, before his study of mechanico-therapy is commenced. As one thus equipped enters the field of orthopædic surgery he will, if he is wise enough to resist the temptation to become an operative surgeon, find many valuable mines to be explored, and much to be learned that is as yet untouched by any writer. And he will find ample work without invading the field of the general surgeon, just as he will find in all parts of the civilized world very many surgeons who are amply qualified to perform all the operations of surgery, and but very few who can intelligently devise and apply apparatus in the various and varying conditions of chronic deformity.

The needs of orthopædic surgery are clearly shown when we appreciate how thoroughly general surgery is taught in all the universities and colleges, while on the other hand mechanico-therapy—a very wide and important field—is too apt to be practically ignored. The result is that the work that should fall into the hands of the educated surgeon is relegated to the commercial instrument-maker. We have

only to look at the barber pole of to-day to recall the position of surgery in former years, and it is not impossible that in a few years the opprobrium that attaches to mechanico-therapy will become a thing of the past, and that we may have a class of surgeons interested in orthopædic work who will be orthopædic surgeons in the strictest sense of the word.

From the standpoint here taken, and as a matter of experience, it seems to the writer that the invasion of the field of general surgery by the modern orthopædist is unnecessary and uncalled for. It further seems to the writer that it can only bring discredit upon a new and important field of work, which is even further removed from general surgery than ophthalmology or laryngology. This invasion will direct the attention of the profession to the weak point in the armament of those who combine general surgery with orthopædic work, and it will, if persisted in in the future, break down the lines between it and general surgery. The remark of a prominent general surgeon to the writer, after reading the latest work on orthopædic surgery, is not, perhaps, so much out of place. He said: "The next work on orthopædic surgery will likely tell us all about frac-

tures and dislocations." The fact that the plan here proposed will necessarily limit the operative work of the orthopædist does not lessen either the importance or the honor of the work that lies before him. Operative surgery has its own place, and in orthopædic work that place should be second ; and operative surgery should be used by orthopædists only as it supplements mechanico-therapy. Orthopædic surgery is as yet in its infancy, and needs men with strong heads and strong hearts, men who are willing to work and study and wait, and to those who do this there will be, I am sure, an ample reward.

And looking at the subject from the standpoint of our meeting here in Berlin, we may learn another lesson. The only possible excuse for the foundation of a special section of orthopædic surgery at this congress is the rapid rise and development of mechanico-therapy, especially in the United States. There would be no true orthopædic surgery to-day if mechanico-therapeutics had not been studied long and patiently by a comparatively small body of intelligent surgeons. And if the committee who addressed their petition to the congress asking recognition, had relied upon the record of orthopædic surgery in the field of joint re-

sections, amputation at the hip joint, laminectomy, osteotomy, etc., I fancy that the committee would have been referred, and rightfully so, to the section of general surgery.

In closing my remarks, I feel that I ought to state that the conclusions reached in this paper are based upon an experience of nearly thirty years in orthopædic work.

In 1873 I found myself in charge of the orthopædic service of St. Luke's Hospital, with no restrictions as to the operative work of my own department. I soon found that the purely surgical aspect of the work was very attractive, and that my interest in the patients under my care was gauged by their present or prospective operative value—and that the conservative or orthopædic side of the work was becoming less interesting. After mature reflection, it became apparent that the operative field was well represented in the eminent surgical staff of the hospital, and that it was clearly my duty to develop and establish the principles of orthopædic surgery. After reaching this conclusion I voluntarily turned over to my colleagues all the purely operative work which required no orthopædic treatment after operation, and from that time up to the day of my resignation I operated

only on those cases which would necessarily remain under my care after operation. Soon after my appointment as surgeon in charge of the New York Orthopædic Dispensary and Hospital, an attempt was made to combine a general surgical staff with the orthopædic work. At first it seemed to be just what was needed, and while questions of jurisdiction were sometimes raised, there was no conflict between the surgical and orthopædic departments. The real difficulty appeared later, when it was found that the junior medical officers seemed to lose their interest in the orthopædic work, while they were very active in the purely surgical work. The hospital was gradually becoming a surgical hospital rather than an orthopædic one. It became apparent to the trustees after a while that the institution was drifting away from its avowed object. After a time the surgical staff retired, and since that time the institution has been a strictly speaking orthopædic one.

As the medical officer in charge of the New York Orthopædic Dispensary and Hospital, and having absolute control of its surgical policy, I have for several years—and since the retirement of the actual surgical staff—operated only on those patients who required special orthopædic

care after operation. All other cases requiring surgical operation have been referred to some general hospital; and I have pursued the same course in my private practice—that is, I have referred all patients requiring surgical operation, who have not demanded special orthopædic care after operation, to a general surgeon. And this, I believe, is the proper position for the orthopædic surgeon to take. During my service at St. Luke's Hospital it was made apparent very soon after my appointment that the resident house staff took little or no interest in the orthopædic ward. Their interests, as young and recently graduated men, were in general surgery and general medicine. Aside from this, though they were all picked men, very few of them seemed to possess the mechanical ability which is an essential element of success in orthopædic work. After a few years' effort to keep the house staff interested, an effort which failed, I was obliged to ask the hospital authorities for a special assistant.

At the New York Orthopædic Dispensary and Hospital it has sometimes been difficult to secure the attention of the junior staff during a period long enough to fit them for future orthopædic work. At the end of six months or a year

they may regard themselves as fully equipped orthopædic surgeons. On the other hand, we have had able men as assistants whose college and competitive examination records were high, whose mechanical instincts were lacking. These men were clearly out of place in orthopædic work. My experience proves that it requires an exceptional man to succeed in orthopædic practice. If he possesses mechanical tastes and ability, and devotes himself to orthopædic work for a sufficient period, he will almost surely succeed in reaching a high place. But if he attempts at the same time to do the work that would naturally fall to the general surgeon, he will, sooner or later, become the latter in effect, if not in name. And if he does not possess, in a high degree, an educated appreciation of the various and complex mechanical problems which will constantly confront him in daily practice, he will very likely turn to operative measures when there may be no need for such a step.

Nor can any one expect to equip himself as an orthopædic surgeon in a short time. After graduation, and a term of service as an *interne* in a hospital, a course of study covering at least five years (including a wide clinical experience in dispensary and hospital work) should be de-

manded of those who expect to become orthopædic surgeons. Orthopædic surgery lies wholly within the domain of "chronic" surgery. The junior medical officers in large general hospitals see but little of this class of surgery. On the other hand, they acquire during their hospital residence a wide experience in "acute" surgery. No one can acquire a safe clinical experience without a prolonged study of many cases; and in the chronic joint department of orthopædic surgery one may wait several years before seeing the end of one's first case.

A great deal will be expected of the orthopædic surgery of the future, and it seems to the writer that the sooner the followers of orthopædic surgery realize that it has enough in itself to sustain its well-earned reputation without encroaching upon other grounds, the better it will be for orthopædy. I feel a natural embarrassment in thus presenting my views, but I also feel that it is a duty, which the present occasion demands; and if my remarks are regarded as embodying the conclusions of one who desires to see orthopædic surgery occupy the high place it deserves, I shall be wholly satisfied; and if they aid at all in solving the question which heads this paper, I shall be content.

ON THE DEFINITION AND THE SCOPE OF ORTHOPÆDIC SURGERY.*

REPLY TO A CRITICISM.†

I HAD begun to think that my remarks on What is Orthopædic Surgery? read before the International Medical Congress held in Berlin, were to receive the most formidable and crushing of all criticisms—viz.: the silence and neglect of my colleagues. A whole year has passed since my paper was read, and no one has been kind enough to take any notice of my attempt to define modern orthopædic surgery. I was therefore much pleased to know that another effort would be made to define orthopædic surgery by one well known in this work,

* Delivered before the American Association at its fifth annual meeting.

† *Vide* article entitled Orthopædic Surgery; its Definition and Scope, New York Medical Journal, November 7, 1891.

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whose opinions and views we have all been glad to hear.

While I can not but feel grateful to my friend for his kind attempt to clear up any misinterpretation of my position, I feel, so far as our German friends are concerned, that his explanation is unnecessary. Just prior to the reading of my essay before the Orthopædic Section of the Berlin Congress I distributed seventy-five copies of the essay translated into German; and I noticed, as I read, that many of my hearers followed me line by line. There was doubtless considerable confusion on the first day, owing largely to the fact that I read in my native tongue. But whatever doubt there may have existed was set at rest by the appearance of my essay, kindly translated by my friend Dr. F. Beely, of Berlin, in the *Berliner klinische Wochenschrift*,* soon after the adjournment of the congress. I can not understand how any of my English-speaking colleagues, who were present when I read my essay, misunderstood my plainly stated views.

As to the quotation referring to my personal responsibility for the views expressed, I feel

* Was ist orthopädische Chirurgie? *Berliner klinische Wochenschrift*, No. 43, 1890.

that I ought to say that I had the honor of inaugurating the movement which resulted in the recognition of orthopædic surgery by the Berlin Congress; and that, as chairman of the committee, I should have been false to my trust if I had permitted even an inference that the committee as a whole was in any way responsible for the views expressed.

We have all listened with pleasure to our friend's remarks. But he does not, I think, make it clear why orthopædic surgeons should undertake to do the work that the general surgeon is so well equipped to perform. He does not make it clear why orthopædic surgeons should not confine themselves to, strictly speaking, orthopædic work—which is as yet in its infancy of usefulness to humanity, and which has before it a career of great brilliancy.

I think we are all agreed that specialties in medicine are the natural outgrowth of a true progress; and that no specialty ought to succeed which attempts to cover, or which even invades, the well-defined limits of general medicine or general surgery. In short, all specialties in medicine should have a distinct and valid reason for their existence. If we stop to ask how orthopædic surgery became a spe-

cialty, we can readily answer that it was due to the undeserved neglect of mechanico-therapy by the entire medical profession. A few earnest and intelligent surgeons have rescued mechanico-therapy from its unenviable position, and have made it what it is to-day. They did it, not by devising new operative procedures for the relief of deformity—the general surgeon did that; but by investigating and studying the mechanical principles involved in the treatment of deformity, and by inventing apparatus to meet the required therapeutical ends. Without the work of these men, the present American Orthopædic Association would have had no existence, and orthopædic surgery as a distinct specialty would scarcely be recognized to-day.

It is universally admitted, I think, that all specialists in medicine should be thoroughly equipped both in medicine and surgery, and there is no reason why one thus equipped should not practice both general medicine and general surgery. It must, however, be apparent that the so-called specialist who does this weakens his own claim to specialism and apologizes for his specialty. This will be true so long as medicine and surgery, generally speaking, are progressive and so long as there are

unsolved truths awaiting the special investigator and the special student.

This, it seems to me, is especially true of orthopædic surgery. There is much to be done, much to be learned, in the mechanical treatment of deformities, while the surgical treatment of deformities will receive ample and well-prepared attention from the general surgeon. A brilliant future awaits those who will steadfastly devote themselves to the development of the scarcely taught and the comparatively unknown branch of mechanico-therapy. There are unexplored fields in sight with rich rewards awaiting the patient tiller; and while there is so much to learn, so much to be developed, and so much to be made available for the benefit of suffering humanity in these unexplored fields of mechanico-therapy, some orthopædic surgeons are content to ignore the benefit they could bestow upon humanity by perfecting true orthopædic surgery and are willing to follow more or less in the beaten paths of general surgery. And we will all admit that the general surgeon is fully prepared to perform all the operations for the relief of certain chronic deformities and that he needs no help from the orthopædic surgeon in apply-

ing the conventional surgical dressings they require; but we also know that the early training of the general surgeon does not prepare him to apply properly devised apparatus in the more difficult cases of chronic or progressive deformity. It should be the aim of orthopædic surgeons to excel in that which gives orthopædic surgery its existence and makes it, properly interpreted, one of the most distinct and necessary of all the special branches of medicine.

Orthopædic surgery has had its first trials and has slowly reached a point from which it can look forward to ultimate success. Sooner or later it will, I think, reach a point where its followers will be true orthopædic surgeons.

In the present status of orthopædic surgery the invasion of the field of the general surgeon by the orthopædist can only be justified on the plea of expediency; but, as a matter of principle, it can never be just or wise for orthopædic surgeons to leave the undeveloped fields of true orthopædic science for the well-trodden but perhaps more attractive paths of general surgery. To mingle the two is to endanger both, especially the orthopædic part. There are very

few of us who have not witnessed examples which prove this statement.

We may go anywhere in the civilized world and we shall find general surgeons who have been amply educated to perform all the operations of general surgery. The medical colleges and universities of the world are monuments to the brilliant success of general surgery. On the other hand, how many of the cities of the world contain men who have received a thorough training in orthopædic work and methods? A liberal training in our colleges and hospitals does not make an orthopædic surgeon any more than it makes an ophthalmologist or neurologist. Years of post-graduate study and work are necessary to make an accomplished specialist in orthopædic surgery; and when one has mastered the rudiments of the science—and the best of us have only done this—he will even then have to be on his guard or he will be diverted from his plain line of duty by the attractiveness and brilliancy of operative work. The true orthopædic surgeon will desire to extend the benefits of a developed mechanico-therapy to relieve the sufferings and the deformities of the human race; and he will find his time fully taken up in one of the most attractive fields of

study in the whole range of medicine. His reward will be ample, for the benefits which will accrue to humanity from a perfected orthopædic science will be second only to the grand results of operative surgery itself; but he who would strive for this goal—of the greatest good to suffering humanity—must necessarily, in the present state of orthopædic surgery, work in new fields. He must devote all his energies and time to his work, and he will scarcely have time—even if he has the inclination—to compete with the general surgeon in the field of operative work.

The pleasure that attends the practice of orthopædic surgery needs only to be stated to be appreciated. As I have remarked elsewhere, orthopædic surgery is an exact science. The orthopædic surgeon is dealing with mathematical and mechanical problems all the time, and the application of the principles of treatment is limited only by the vulnerability of the human tissues and his therapy is regulated by his own hands. If his patience equals his confidence, the orthopædic surgeon can achieve many very brilliant results.

So long as orthopædic surgeons combine general operative surgery with their orthopædic practice, the medical profession will fail to

properly recognize their position. This will accrue to the advantage of an uneducated class of instrument-makers, whose efforts to serve the profession are laudable, but whose failures are only to be expected. So long as this uneducated class are relied upon by the profession, humanity will be the sufferer, and the general surgeon will be dissatisfied with his management of cases of chronic deformity requiring special mechanical treatment. The medical profession need educated orthopædic surgeons to whom they can refer patients with chronic deformity requiring special mechanical treatment with confidence; and the orthopædic surgeons, with equal confidence and with a merited self-respect, should refer their operative cases not requiring special orthopædic care after operation to the general surgeon.

By and by a sufficient number of surgeons trained in orthopædic work and methods will exist, and then the profession at large will recognize their position and claims. Then the instrument-maker will be relegated to the position which the pharmacist now occupies—viz.: that of “compounding” the “prescription” of the surgeon.

There is too much false pride among some

orthopædic surgeons—and this false pride interferes very materially with the advance of true orthopædic surgery. Some orthopædic surgeons seem to want to be recognized as operative surgeons. They dislike, for example, to have it said: “Oh, yes, Dr. — is good enough at applying a brace for deformity, but they say he is too timid to excise a joint.” The consequence is that Dr. — wants to prove his ability to perform all the operations of surgery. I have heard remarks like this made of some of our best orthopædic surgeons—I know it has been said of myself. But we must rise above such puerile criticism. The fact that we choose to send our, strictly speaking, operative cases, directly to some general hospital or to some general surgeon places the orthopædic surgeon in a secure position; for the difficult cases which he retains and which he is competent to treat are better cared for than they could be by the general surgeon—and we know that the general surgeon is fully equipped to care for the, strictly speaking, operative cases. If we candidly study the element of humanity and progress in our work, it would seem that this would be the best for those whose interests are committed to our care.

But I must not be misinterpreted. The major work of the orthopædic surgeon lies in the mechanical field. On the other hand, he must be prepared and equipped to operate when his work demands it, and he must keep abreast with current medical thought and practice. He is not to be a mechanic alone. But, as a matter of principle, and a logical sequence of his chosen specialty, the orthopædic surgeon should only operate upon those patients with chronic deformity who ought necessarily to remain under his care after operation. This is where, I think, the operative line should be drawn, for the function of the orthopædic surgeon should be to fill a place not occupied by the general surgeon. This position is one which all orthopædic surgeons can occupy with credit to themselves—and if it is maintained, it will result greatly to the credit of orthopædic surgery and to the benefit of suffering humanity.

I can not but feel flattered in thinking that our friend has adopted my definition of orthopædic surgery in every respect except the final and qualifying clause. He would have it read as follows: "Orthopædic surgery is that department of surgery which includes the prevention, the mechanical treatment, and the op-

erative treatment of chronic or progressive deformities."

Let us see where this would lead us. It would make the orthopædic surgeon a general surgeon in effect. He would be called upon to trephine for cerebral paralysis, to perform laminectomy for spinal paralysis, to amputate for incurable deformity, to excise diseased joints which do not require mechanical treatment, and to operate for spina bifida, harelip, elephantiasis arabica, etc., and in cases requiring plastic surgery, etc.

I respectfully submit that these operations belong to that class which our friend calls "the operative procedures that legitimately belong to the general surgeon," to which, he says, "orthopædic surgery lays no claim."

The above-mentioned modification of my definition would lead us far from the goal which all orthopædic surgeons should strive to reach.

On the other hand, it would appear that the definition submitted at the Berlin Congress draws a very distinct line, founded on the real traditions of modern orthopædic surgery. It places orthopædic surgery in a clearly defined position, which makes it incumbent upon its fol-

lowers to operate in those conditions only which clearly demand special orthopædic care.

In order to be explicit, I again submit my definition of orthopædic surgery as read before the Berlin Congress. It is as follows: "Orthopædic surgery is that department of surgery which includes the prevention, the mechanical treatment, and the operative treatment of chronic or progressive deformities, *for the proper treatment of which special forms of apparatus or special mechanical dressings are necessary.*"

THE RELATION OF ORTHOPÆDIC SURGERY TO GENERAL SURGERY.*

GENTLEMEN: It has been for several years the special function of the New York Orthopædic Dispensary and Hospital to aid in the development of purely orthopædic methods. Its work has been to develop and improve the much-neglected branch of mechanico-therapy. It has devoted much time and effort to the early recognition of the deforming diseases, especially of childhood, and it has aided in devising methods not only for the prevention of deformity, but also for relieving or curing it after it has occurred. While the general surgeon has been occupied in bringing operative surgery to its present very high standard of efficiency, your

* An address delivered before the Trustees of the New York Orthopædic Dispensary and Hospital, upon the occasion of its twenty-third annual meeting.

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institution has been working in a field of almost equal importance—though far less brilliant and far less attractive to the rank and file of the medical profession.

The operative side of general surgery has always been well taught in all the medical colleges and universities. On the other hand, there has been in the same institutions an almost general neglect of orthopædic surgery—a department of surgery almost as important as operative surgery itself, and one which is of great value to the human race. Your institution has been content to work in those lines which would aid in removing the unjust opprobrium that attaches to mechanico-therapy, and in demonstrating the usefulness and the wide range of properly applied mechanical principles of treatment.

In short, your institution has been steadily working upon conservative lines—neither ignoring the great strides in general surgery, nor forgetting its own mission. Its efforts have been rewarded in more ways than one. The steady increase in the number of patients which have sought your services was mentioned in the last annual report; and while orthopædic institutions and orthopædic departments of institutions and orthopædic clinics at the colleges

have multiplied in New York city and elsewhere since this institution was organized in 1866, it still remains a fact that a large percentage of the patients which apply to your institution for treatment have previously had no orthopædic treatment at all; and while there are now quite a number of places to which the poor cripple may apply, so broad and so generous is the philanthropy of New York, the important orthopædic institutions of our city are overcrowded, and some of them, like our own, are asking for more room and increased facilities.

The subject of mechanico-therapy is so important and its future usefulness is now so well assured that we, as an institution, may well feel proud that our efforts have been so steadfastly directed toward its development. The general surgeon, whose ample and easily obtained training fits him to perform the cutting operations for the relief of deformity, finds himself fully occupied in keeping abreast with the current surgical thought and literature of the day. The dexterous operator finds his time fully taken up in his peculiar and special work. But there is another side to surgery. The joint, for example, that is excised in many instances may be saved; the limb condemned to amputation on

account of its deformity may in many cases be straightened. Properly applied mechanico-therapy will save many of the deformities that fall into the hands of the operative surgeon. Indeed, many of the deformities that were formerly almost habitually operated upon can be relieved or cured by orthopædic measures without operation. But if a patient with deformity reaches a point where orthopædic measures are contraindicated, or useless, or where a surgical operation, with ordinary surgical dressings only, is necessary to remove the deformity, he should at once be placed under the care of the general surgeon. Orthopædic surgeons, in short, ought to limit their work to their own department—in which there is enough to do and enough to learn, without interfering in the slightest degree with the already overcrowded ranks of the general surgeon.

Orthopædic surgeons have until recently been placed at a great disadvantage. The early followers of true orthopædic surgery—and some of them are alive to-day—were necessarily self-educated in orthopædic methods and work. They had no school or college; no hospital or dispensary to which they could go to receive instruction in orthopædic surgery. Equipped

as regularly educated men, amply prepared to amputate a limb or excise a joint, etc., they were not taught even the simplest rudiments of mechanico-therapy. They might have been told that "Smith's clubfoot shoe is the best," or that "Jones's knock-knee instrument is superior to Brown's"; but of the mechanical principles involved they were taught little or nothing. In addition to this, they had to meet and overcome the still existing opprobrium that attaches to the subject of mechanical treatment. They had also to meet the criticism that "Dr. X. could perhaps apply a clubfoot shoe pretty well, but he could not amputate a limb as well as Dr. Y."—as if any means that relieves human suffering is beneath the dignity of the most highly educated and accomplished surgeon that ever lived.

This is becoming changed. There are several places where the seeker after orthopædic knowledge may find opportunities for study; and while it is difficult to remove the old prejudice that exists, especially outside of New York city, it will not be long before orthopædic surgery, *per se*, will occupy its legitimate place in the estimation of the entire medical profession. In the meantime, ortho-

pædic surgery needs men who will work and wait—men who will patiently investigate the many unsolved questions that confront it on all sides; men who will devote themselves to a true specialism, and who will steadfastly refuse to compete with the general surgeon in the field of operative surgery.

We have only to look about us to see how fully the field of general surgery is occupied. No one in the civilized world, requiring the services of the general surgeon, need go unrelieved. The general hospitals of all countries are numerous and well-equipped, and this is especially true of our own great city. On the other hand, what are the special provisions made for the treatment of the deformed? There are comparatively few surgeons in the whole world whose early education and training fit them to intelligently apply apparatus to the conditions of deformity. In some of the large cities, both here and abroad, there are orthopædic dispensaries and hospitals, but the surgeons connected with them and controlling them are too frequently men with strong operative instincts and training—surgeons who are accomplished in all that pertains to diagnosis, the conventional surgical dressings and the use

of the knife, but who are necessarily lacking in the special training required to successfully apply the fundamental principles of mechanico-therapy to an average case of progressive deformity. They are, by nature and education, operative surgeons who duly recognize the value of mechanico-therapy, but they are, I think, too often willing to relegate the mechanical detail of treatment, both before and after operation, to the uneducated instrument-maker, whose interest in the patient is merely a commercial one. It is largely so in England, France and Germany—it is only less so in America. At the same time, there are quite a number who are, strictly speaking, orthopædic surgeons, whose education is based upon an early and prolonged training in orthopædic methods, and it is to these men that we must look, I think, for the advancement of true orthopædic surgery.

It must be apparent that it is only by special effort and prolonged study and work that any department of medicine can reach its maximum of benefit to the human race. The history of medicine proves that many of its greatest advances have been made by broadly educated men who have devoted themselves to special branches of work. And so it is in ortho-

pædy. It is not the surgeon who amputates a thigh, reduces a fracture or a dislocation, and applies a hip splint the same day, that is likely to advance orthopædic science. It is more likely to be the surgeon who, with the wide and almost unexplored field of mechanico-therapy before him, devotes his life to demonstrating its great value in the various conditions of deformity and deforming diseases.

The function of the orthopædic surgeon should therefore be to fill a place not occupied by the general surgeon—to do a work that the general surgeon is either unwilling or unfitted to undertake, and to aid in developing an important department of surgery which has been too long neglected or ignored. Those deformities which general surgery is competent to relieve, without the intervention or aid of the orthopædist, should be placed at once under the care of the general surgeon ; while, on the other hand, chronic cases requiring special mechanical treatment, either in the prevention or cure of deformity, should be placed under the care of the orthopædic surgeon.

It is my experience that a longer training is necessary to fit one to be an orthopædic surgeon than to fit one to be an operative surgeon. The

brilliancy of operative work attracts many of the best men in the profession, while the hard and rugged work of mechanico-therapy seems to repel many who are adapted to orthopædics; and yet the work of the orthopædist may be called an exact science. He is dealing with mathematical and mechanical problems all the time. He has a definite object in view, and his therapy is controlled by his own hands. He is limited in the application of his principles of treatment only by the vulnerability of the human tissues; and while he may be in doubt as to the best "method" to be employed, he is never in doubt as to the ultimate principles of treatment.

The field of orthopædic surgery is therefore a very wide one—so wide and so comprehensive that one engaged in its practice need not encroach on the field of the general surgeon. Still, the orthopædic surgeon should be an educated operative surgeon—and he should be prepared to operate upon any patient who *requires special mechanical treatment after operation*. But the operative treatment should be secondary to the mechanical, and the element of conservatism should necessarily enter largely into the work. The patient mechanical work—may be of years—necessary to save a limb or joint from deformity,

may be less brilliant than the operative means that removes them, but the real merit lies in that method which saves the limb and restores the affected individual to society with a useful member.

In an essay read before the International Medical Congress held in Berlin in August last the writer raised the question, "What is Orthopædic Surgery?" and he ventured to define it as follows: "Orthopædic surgery is that department of surgery which includes the prevention, the mechanical treatment and the operative treatment of chronic or progressive deformities, for the proper treatment of which special forms of apparatus or special mechanical dressings are necessary."

The conclusion formulated in this definition is based upon nearly twenty-two years of work in your institution—seventeen years spent in the orthopædic ward of St. Luke's Hospital, combined with an early training of five years in the New York Hospital for the Relief of the Ruptured and Crippled. It places your institution on record as being the first to formulate a definite plan of work, which separates orthopædic from general surgery, and which aims to cover a definite field not included in that of the general hospitals and dispensaries.

THE PRESENT NEEDS AND FUTURE DEMANDS OF ORTHOPÆDIC SURGERY.*

GENTLEMEN: As I rise to address you this evening the new hospital building approaches completion. Recently remodeled and much enlarged, it is fully equipped in every important respect for modern orthopædic work.

A year ago we were deeply in debt. The ordinary dwelling house adjoining your property on the east, unfitted for hospital use, had been purchased. We were without means to erect a suitable hospital structure in its place. To-day, through the kindness of friends, a new fireproof hospital building, as yet not wholly

* A portion of an address delivered before the trustees of the New York Orthopædic Dispensary and Hospital upon the occasion of its twenty-ninth annual meeting, held November 16, 1896.

Reprinted from the New York Medical Journal for December 12, 1896.

paid for, stands in the place of the property which we purchased. Aided by this additional building, we find that our capacity for hospital patients has been increased one third; we have made various changes in the Sloane pavilion and in the older hospital structure; an elevator has been introduced; we have a complete Röntgen-ray apparatus, a modern operating room has been added to our equipment, and the three original buildings comprising our now consolidated hospital represent all that the most earnest critic could demand in orthopædic work. It matters but little where the examination commences, whether in the shop, where the most intricate and delicate apparatus for the treatment of deformity can be made; or in the domestic department, where all the modern improvements have been introduced, the progress upward from story to story develops a careful economy of space, with a liberal allotment of room for both the dispensary and hospital.

The dispensary is especially adapted to the needs of the outdoor patients, who crowd the reception and treatment rooms daily. It is on this floor that the X-ray room has been placed, and it is here also that the interesting work of the neurological department has been located.

Nearly the whole first floor of the three buildings comprising our remodeled hospital is given up to dispensary work.

On the second floor are located the rooms for the administrative work of the hospital, the children's dining room, and the operating room—the two latter being rooms that would attract attention in any hospital.

Six wards, accommodating seventy-five patients, occupy the third and fourth floors, and everything has been done to make these wards bright, attractive, and aseptic, while the problem of ventilation has received its full share of attention.

The fifth story contains the children's play room, the roof garden, and rooms for nurses, while, at a remote point and unconnected with the rest of the house, and with an entrance from an open roof only, there is an isolated ward with suitable sanitary adjuncts, for suspected acute infectious and contagious diseases.

This, in brief, is a description of your completed building. The more one studies the arrangement of the various parts of the building and notices how completely the compact whole represents the needs of a modern and progress-

ive orthopædic hospital, the more the friends of your work must be satisfied.

Modern orthopædic work demands all that you have given your medical staff. The theories of a few years ago regarding the causation of tuberculosis have become demonstrated facts. The light which modern bacteriological investigation has thrown on the various morbid processes which enter into the question of the production of certain chronic deformities is no less important to the orthopædic than to the general surgeon. In treating these deformities from the operative standpoint, the orthopædic surgeon needs the same training as the general surgeon, and the same aseptic and general surgical care should be exercised, for example, in opening a simple abscess connected with a diseased joint as in operating for an acute appendicitis. But while the general surgeon covers a wide operative field, the orthopædic surgeon finds, in his work, a more limited operative field. The latter, however, should be no less a surgeon because he operates in those cases only which require special orthopædic care after operation. To extend the operative field of orthopædy beyond this point is to break down the only barrier between it and general surgery, and the

effect is to belittle true orthopædic surgery and to emphasize the impression, only too pronounced, that the tendency of the orthopædic surgeons of to-day is to make orthopædy a stepping stone to general surgery. The effect of this on legitimate orthopædic surgery can be imagined. If it should so happen that the present views of some of those who are known as orthopædic surgeons should prevail, there will be no orthopædic surgery, except as it may exist as an adjunct to general surgical practice, and the real foundation of orthopædy—that is, the study of mechanico-therapy—will be relegated to the instrument-makers from whom legitimate orthopædic surgery rescued it not many years ago.

Your institution stands as the exponent of legitimate orthopædic practice. Until recently it has been hampered, by the lack of proper facilities, in the full performance of its work. During this time it has striven patiently and persistently to develop the much-neglected side of deformity surgery—namely, the unattractive mechanical side. But unattractive as is this part of the work to the average orthopædic or general surgeon, it is the important side, and it is the side of the work upon which the success

of the treatment of a case of deformity depends. It seems almost useless for me to say that the same attention will be given to this part of the work in your institution in the future as long as I have the honor of being its surgeon-in-chief, and I dare to hope that my successor, whoever he may be, will hold the same views. The addition of an operating room simply enables us to treat our patients from both an operative and mechanical standpoint. It does not mean that the operative side will be developed at the expense of the mechanical work. It does not mean that there is any danger of your hospital being known as a general hospital, where all, or even many, of the operations of surgery are to be performed. If it becomes necessary for us to operate to overcome a deformity, and the patient requires special orthopædic care after operation, we propose to operate, but all other patients requiring surgical care will be referred to some general hospital, where they belong.

The future of orthopædic surgery depends upon the deliberate study and development of the mechanical aspect of the work. There will always be operative surgeons who can perform the cutting operations which are sometimes necessary to relieve chronic deformity. On the

other hand, there is to-day a scarcity of surgeons who understand, or who have been taught to apply, the principles underlying the mechanical correction of deformity. The student of mechanico-therapy needs encouragement, and the medical profession should understand more fully that it is only by a conscientious and prolonged study of both the operative and mechanical work that a fully equipped orthopædic surgeon can be produced. It is taken for granted even in our best medical colleges that a student is a natural mechanic—born to devise and apply apparatus in the treatment of chronic deformity—and yet I venture to say that there is no more delicate or difficult problem in the whole field of surgery.

Who will be the first one to endow a chair of mechanico-therapy, associated with a clinical professorship of orthopædic surgery, in one of our medical schools?

To apply an apparatus, already made, to a patient, to give a description of Smith's hip splint, or Jones's spinal brace, or Robinson's clubfoot shoe, or to apply a plaster-of-Paris splint in presence of a class of students, is like giving a simple verbal description of the quadriceps extensor femoris muscle to one who has

never dissected a human body. Actual training in mechanical work is as necessary to a successful student of orthopædy as is dissection to an anatomist, or as clinical study and laboratory work are to the successful development of the well-trained medical man. As the old style of giving didactic lectures in medical schools has given way to more practical and scientific methods of instruction, so, in the future, the present methods of teaching orthopædic surgery will be re-enforced by practical work in the mechanical room. The perfunctory application of an apparatus before a class will give way to a description of the fundamental principles underlying the mechanical, anatomical, and surgical problems involved. The student will then be obliged to apply these principles under the instruction of the professor—and the student will thus gain a real knowledge of the subject.

When one sees, in the various instrument-makers' shops, the many crude and incorrectly constructed instruments for the treatment of chronic deformity which are, literally, like sugar or salt, in the market, one can realize the embarrassment of the average medical man in his effort to cope with the treatment of a patient with a chronic or progressive deformity. His guide

is the profusely illustrated catalogue of some enterprising instrument-maker. His knowledge—for there are no text-books on the mechanico-therapy of orthopædic surgery—is limited and his failures are many. The existing works on orthopædic surgery do not satisfactorily cover this field. Whose is the fault? It lies wholly with those who teach, and it will be thus until the subject of mechanico-therapy, as applied to the problems involved in orthopædic surgery, is made an obligatory course in the medical colleges.

So far as is possible this work has been done in your institution in the annual course of lectures which have been given under your auspices for the past twenty years. It has been further amplified by throwing open the doors of the institution to those who wish to study the mechanical principles involved in the treatment of deformity, and many have availed themselves of this privilege. There are at present three or four surgeons from various distant cities who are following the work of the dispensary and hospital. Our work in this direction might easily be increased if it were more generally known that we always welcome those who wish to study our work and methods.

From causes entirely beyond our control the Morgan operating room was not completed until early in the summer. We had used the room only once when orders came to remove all the hospital inmates to the country, in anticipation of the extensive changes in the building—which have since been made. On this account, and also on account of the flying mortar dust arising from the demolition of the old building, it was deemed best to keep the operating room closed all summer. The furniture, etc., which was removed, has been replaced and the room is now in order and operative work has already begun.

It is due to the generosity of one of our trustees that we have a complete Röntgen-ray apparatus as a part of our regular dispensary and hospital work. Its use opens a large field for scientific work and study. It will serve to throw much light on that which has hitherto been obscure and difficult. In all the diseases and deformities of the major articulations and long bones, and also in other respects, its assistance in forming a picture of the conditions will be invaluable—and the entire medical staff of the Hospital desire to thank the gentleman who made this valuable present to the institution.

THE OPERATIVE SIDE OF ORTHOPÆDIC SURGERY.*

GENTLEMEN: The founders of the New York Orthopædic Dispensary and Hospital builded better than they knew when, thirty-one years ago, they met and organized the work which calls us together on this occasion.

Thirty-one years ago orthopædic surgery was scarcely more than a name in New York city. It may almost be said that few outside of the medical profession and the technically educated classes grasped the full meaning of the word "orthopædic." A few surgeons, inspired largely by the late Dr. Henry G. Davis, were devoting themselves to the treatment of deformities, especially those occasioned by diseases of the spine and hip joint. Modern ortho-

* A portion of an address delivered before the trustees of the New York Orthopædic Dispensary and Hospital on the occasion of its thirtieth annual meeting, held November 15, 1897.

Reprinted from the Medical Record, December 18, 1897.

pædic surgery was in its infancy, and the work of these pioneers was attracting the attention of the lay as well as the professional public. It was during this embryonic period that the founders of your institution applied to the State Legislature for a charter, in the following language: "The purposes of the said corporation shall be to establish and maintain an institution for the treatment of physical deformities and to give instruction in such treatment—and more especially to afford surgical and mechanical treatment to the disabled and deformed among the poor."

It was the mechanical genius of Davis which contributed greatly to this new era in the treatment of physical deformities. It was he and his colleagues who made American orthopædic surgery famous. It was, however, the mechanical rather than the surgical side of orthopædy of those days which brought to the front the names of those who are to-day recognized as the fathers of orthopædy in this country, and it was the mechanical treatment of hip-joint disease and spinal disease, as taught by Taylor, which led to the foundation of your institution and which has had more or less effect upon the development of American orthopædic surgery.

It was under these circumstances that your special charter was obtained from the New York State Legislature. It would have been a matter of no surprise to me, knowing as I do the sentiment of the profession in those early days, and appreciating also the influences which originated our great work, if the charter had simply designated the mechanical treatment of deformity as the sole object of the corporation. But with a wise and almost prophetic foresight, the charter was framed in a broad and liberal sense, and the portion quoted above might almost be called a definition of modern orthopædic surgery.

On previous occasions I have called your attention to the relation of orthopædic surgery to general surgery—to the necessity of a thorough mechanical training as a preparation for orthopædic work, and to the future demands of orthopædic surgery from a mechanical standpoint. It would seem only proper on this occasion, therefore, that I should dwell somewhat upon the operative aspect of the treatment of deformities.

The treatment of chronic deformities would be emasculated if mechanical treatment was omitted. Indeed, under those circumstances,

there would be only operative surgery left. On the other hand, if operative surgery was omitted, mechanico-therapy would still find an important place in surgical science and the major part of orthopædic work would still go on. To the legitimate orthopædic surgeon, therefore, operative work takes a secondary and minor position, just as the mechanical part takes by far the more important place; and in true orthopædic surgery operative work, *per se*, has no real status. In short, if orthopædic surgery is to maintain its position among the specialties in medicine, it must exist upon a mechanical foundation and its disciples must be experts in the use of apparatus. At the same time the orthopædic surgeon should be well prepared to operate upon those patients who require special mechanical treatment after operation. Hence it is that I maintain that the simple excision of joints is not within the field of orthopædic work, because the general surgeons and the general hospitals are fully equipped to do this work and are glad to receive and care for this class of cases, the after-treatment of which ordinarily requires no special orthopædic training. The same may be said in a general way of the operative treatment of knock-knee

and bowlegs. The artificial fracture of a bone requires the same treatment as an accidental fracture, and this certainly comes within the scope of general surgery. Under these circumstances there is no occasion to fill the wards of an orthopædic hospital with patients of this class, as long, at least, as there is such a great demand upon it for strictly orthopædic cases, which are not as a rule received by the general hospitals. For example, a patient with knee-joint disease or hip-joint disease needing excision, or a patient with rhachitic leg deformity requiring osteotomy, applies for admission to your wards. Am I, as your surgeon-in-chief, justified in receiving the case when there are fifty or more cases of hip-joint disease, spinal disease, clubfoot, etc., which urgently demand your care and which are awaiting admission to your wards? My reply is, "No." We could fill our wards with operative cases in a month, the larger number of which do not require orthopædic care after operation, and which can be cared for in every way in the general hospitals. I certainly feel it my duty to decline them, when the only objects I would have in admitting them would be to gratify a personal ambition to appear as an operative surgeon, and

to submit for your consideration at the end of the year an ample table of "operations performed." Some surgeons best known as orthopædic surgeons are wasting their time on work that is well done by general surgeons and well performed in general hospitals. These men are making a serious error, I think, and are retarding the normal growth of true orthopædic surgery. Some day these facts will be appreciated. It may not be in my day, but sooner or later the truth will prevail, and both the medical profession and humanity will be benefited. In the mean time I shall keep on in the course I marked out twenty-four years ago, when at an early age in my professional career I had the opportunity to gratify my surgical ambition in the orthopædic wards of St. Luke's Hospital. Nor is that opportunity lacking now, with the great mass of clinical material which presents in the service of your institution. I am gratified to know that the seed sown nearly a quarter of a century ago is bearing good fruit.

The operative part of orthopædic surgery therefore becomes the simple but necessary adjunct of the mechanical work. One may be an operative surgeon and know but little or noth-

ing of real orthopædic work, but the orthopædist must be the one and know the other. One may perform all the major operations of surgery, and yet not have the requisite technical knowledge properly to adjust a hip splint or a spinal brace. The orthopædic surgeon should be able, if the after-treatment demands it, to excise a joint or to perform any operation which supplements mechanico-therapy, but in all but very exceptional cases he should confine his cutting work to that field which supplements his mechanical operations.

Nor does it follow, I think, because a deformity exists, that the patient should necessarily come under the care of the orthopædic surgeon, any more than that the general condition giving rise to the retinitis of Bright's disease, or to the tabetic atrophy of the optic nerve in locomotor ataxia, should come under the care of the ophthalmologist. All specialties have their origin in general medicine or general surgery. The existence of a specialty depends upon several factors, the important one being the necessity for the development upon certain lines of a neglected branch of medicine or surgery involving patient study and careful research. It is along these lines

that a specialty succeeds, and the danger of specialism of the present day lies in the fact that those who follow it are prone to invade other fields. The fault with many of those who are known best as orthopædic surgeons is that they do not confine themselves to orthopædic work; they often operate when there is no necessity for cutting, and they are not familiar enough with the technique of mechanical work to get the best results from mechanico-therapy. They do the work of the general surgeon instead, neglecting or ignoring the plain path of duty which lies so patent before them.

Why is this so? A few extracts from a recent editorial in the New York Medical Record may help us in answering this question. The editorial referred to is entitled, "Is Gynæcology Destined to Become an Obsolete Specialty?" After a general consideration of the relation of gynæcology to general surgery, the writer says: "Not content with confining themselves to their proper region, they [the gynæcologists] have reasoned that their familiarity with abdominal surgery should render them the equals if not the superiors of general surgeons in the handling of cases which bear no relation to diseases of the pelvic organs." The writer then asks:

"How is it that this change has come about in America, when abroad the distinction between the gynæcologist and general surgeon is just as sharp as ever? It appears to be due to some extent to the fact that the commercial factor has become prominent to the exclusion of the scientific." Again: "If gynæcology is to remain a specialty, it must be because its followers continue to demonstrate the fact that they can do the work better than the general surgeon. . . . It is along the line of conservatism that the battle must be fought, not radicalism." Still further: "Gynæcology is the natural outgrowth of general surgery, but the contrary is far from being true, and any attempt to reverse the condition must end in ultimate failure." And finally: "Let gynæcologists prove that their specialty is capable of development along other lines besides those of radical surgery, and there is no danger that it will ever come to be regarded as unnecessary." Comment on these plain statements seems superfluous. But if the words "orthopædic surgeon" or "orthopædic surgery" be inserted in place of "gynæcologist" or "gynæcology," in the quotations given above, the truth will be apparent to the candid observer. It will be along the lines of conserva-

tism that orthopædic surgery will be developed—not on the lines of operative surgery—and it will be all the better for the men now engaged in preparing for future work in orthopædic surgery if they bear these facts in mind.

IS ORTHOPÆDIC SURGERY TO BE-
COME AN OBSOLETE SPECIALTY?—
WITH REMARKS ON SPECIALISM.

To the Editor of the Medical Record:

SIR: No one interested in the advancement of true specialism in medicine can fail to thank you for your editorial, "Is Gynæcology Destined to Become an Obsolete Specialty?" which appeared in the Medical Record of February 27, 1897.

Aside from the merits of the question raised by the discussion between the surgeons and the gynæcologists, the more important issue is, Is it the best policy, both from a scientific medical, and humanitarian standpoint, for any special department of medicine to "overlap" and invade other fields? All will admit that this is in many instances a necessity as a matter of study and education. But as a matter of practice it would seem to be an error. In a humble way I

have discussed this subject elsewhere when my essay, "What is Orthopædic Surgery?" was criticised in the New York Medical Journal of November 7, 1891. In my reply* I say: "It is universally admitted, I think, that all specialists in medicine should be thoroughly equipped both in medicine and surgery, and there is no reason why one thus equipped should not practice both general medicine and surgery. It must, however, be apparent that the so-called specialist who does this weakens his own claim to specialism and apologizes for his specialty. This will be true so long as medicine and surgery, generally speaking, are progressive, and so long as there are unsolved truths awaiting the special investigator and the special student."

Have the specialists solved all the truths in their special departments? How many have ceased to be special investigators as well as special practitioners?

Unless these questions can be satisfactorily answered it would seem that the reply made to my critic regarding orthopædic surgery is also applicable to other specialties.

*"On the Definition and Scope of Orthopædic Surgery," New York Medical Journal, November 14, 1891.

I do not stop to question the motives of those who "overlap." They may be honest but mistaken, or they may be selfish or "commercial." But it is a fact that the effect of the present state of affairs upon the entire medical profession is bad, and I have noticed that the lay public is beginning to ask: "What sort of a specialist is he who, in his office, in his writings, and in his college and hospital work is a specialist, but who is a family physician and a general practitioner among a selected *clientèle* on other occasions?"

The outlook for the general practitioner is indeed an uncertain one if the "specialist" is to invade the domain of the family physician. Why should he do so?

Not long ago, for example, I had occasion to send a gentleman who consulted me to a well-known specialist. With my full approval this specialist took entire charge of the conduct of the case. He is now duly installed as the regular medical attendant of not only the patient himself, but of his immediate family and some of his friends. I frankly told the "specialist" that I was surprised at his course, but he only smiled and said, "Others do it."

This is no excuse. As I have often said to

those who have honored me by asking my advice regarding the adoption of a specialty: "One can make no better investment of one's time after a thorough training than gradually to adopt a specialty when opportunity or inclination favors. When, however, a certain point is passed, or a hospital or college position, presenting an opportunity for clinical study and investigation, enables one to assume a position as an authority, one should, if he adopts a specialty, cease to be a general practitioner."

The demoralization which has apparently invaded the gynæcological field has already left its marks on orthopædic surgery, and the remarks made in your editorial, with a slight change of words, are applicable to quite a number of men who are best known as orthopædic surgeons. Not content with a patient study in the wide and practically unexplored field before them, these "orthopædic surgeons" "overlap" and, neglecting legitimate orthopædic work, invade the field of the general surgeon.

There are orthopædic surgeons to whom even laparotomy is not a stranger. A considerable portion of a chapter in a recent work on orthopædic surgery is devoted to "amputation at the hip joint." A paper read before the

American Orthopædic Association and published in its Transactions is entitled "Amputation as an Orthopædic Measure." One man, until quite recently a member of the Orthopædic Association, resigned because he felt that he could not afford to have it known that he was connected with the association. Other good and able men, starting out with the intent and desire of becoming orthopædic surgeons, have failed to have the "courage of their convictions" at a critical moment and have become in effect general surgeons. And the profession smiles and the communities in which they live can not see any great difference between the general surgeon and his orthopædic competitor.

Orthopædic surgery is bound to become a great specialty, but it will not succeed on general surgical lines. Before it can be a real specialty it must cease to appear in the rôle of a competitor with general surgery. It must not "overlap." Its disciples must cease to antagonize the best elements of the profession by posing as orthopædists, when they only lack opportunity to become general surgeons. And until this change is brought about there will be no true orthopædic surgery, except as here and there a man stands up for the right and defies

criticism, for it is getting to be almost as rare to find a legitimate orthopædic surgeon as it is to meet with an orthodox gynæcologist who does not "overlap" and compete with the general surgeon in operating for appendicitis, etc.

Many do not, I think, appreciate how much there is in orthopædic surgery, outside of its somewhat limited operative work, or how far it may be made useful to humanity. It certainly can not aid the orthopædist to compete with the general surgeon, and indeed there is no necessity for it. If it were accepted and understood by the profession at large that the orthopædic surgeon should confine his operative work to those cases which require special orthopædic care after operation, the entire profession would be benefited; orthopædic surgery would find itself busy with congenial work, and it would occupy a well-defined and enviable position among the specialties.

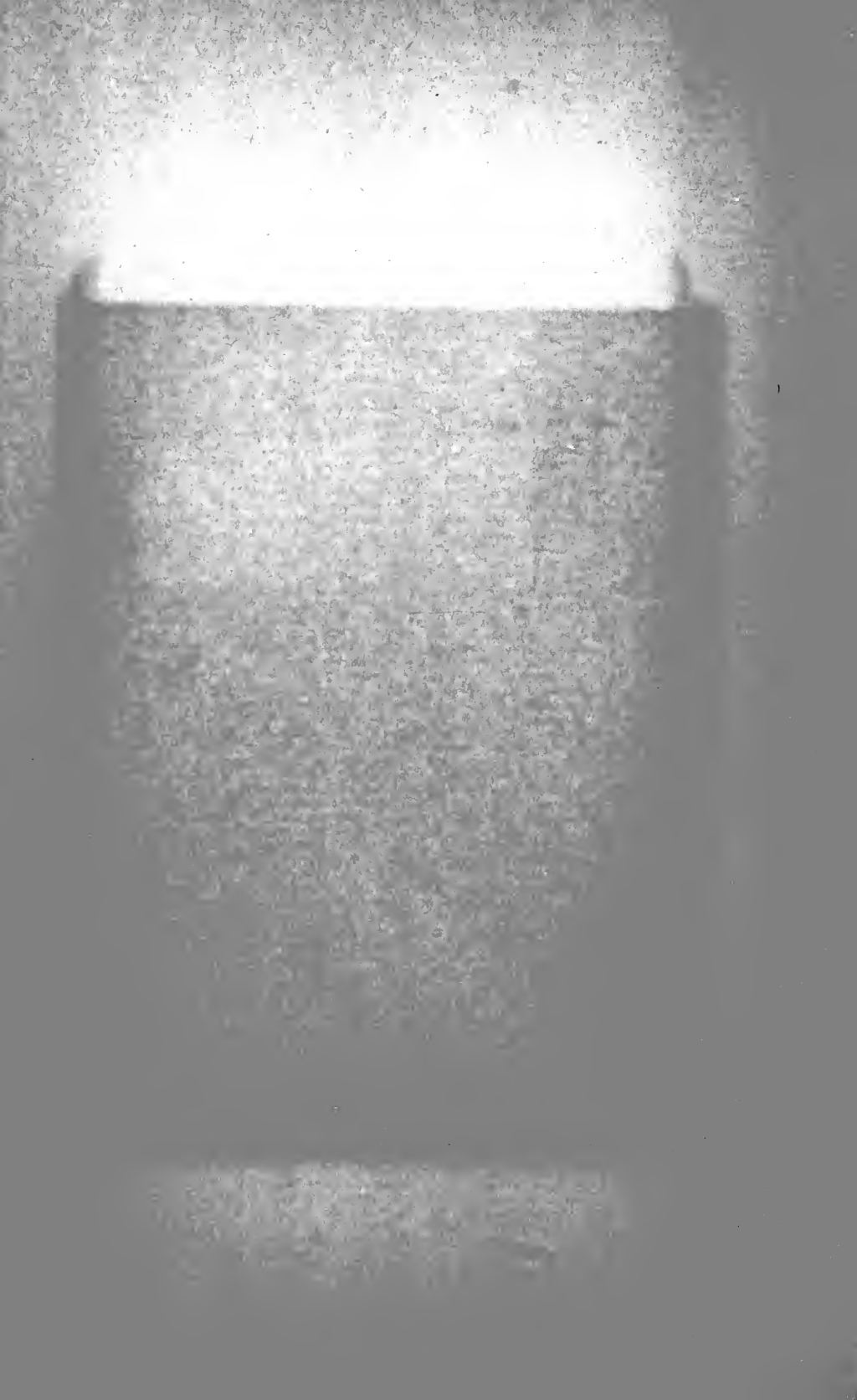
NEWTON M. SHAFFER, M. D.

28 EAST THIRTY-EIGHTH STREET, NEW YORK,

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Brief essays on orthopaedic surgery



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